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Bat Cestodes from Bolivia, South America, with Descriptions of Six New Species

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ABSTRACT—Seven (including six new) species and two unidentified juveniles of the hymenolepidid and the anoplocephalid cestodes were obtained through the examination of 83 vespertilionid bats belonging to two genera and two species, 28 molossid bats belonging to two genera and two species and 130 phyllostomid bats belonging to ten genera and 16 species, collected in nine regions of Bolivia between July 31 and October 13, 1984. *Vampirolepis longisaccata* sp. n. from *Molossus molossus* is related to but differs from *V. christensoni* (Macy, 1931) Spassky, 1954, in the shape of rostellar hooks. *Vampirolepis santacurzensis* sp. n. from *M. molossus* differs from *V. longisaccata* in the form of rostellar hook handle, the number and length of rostellar hooks, and the shape of ovary. *Vampirolepis crassihamata* sp. n. from *M. molossus* differs from *V. santacurzensis* in the size and shape of rostellar hooks. *Vampirolepis bihamata* sp. n. from *Micronycteris minuta* differs from all the known species of the genus *Vampirolepis* from Chiroptera in bearing rostellum armed with a double row of rostellar hooks. *Vampirolepis pandoensis* sp. n. from *Eptesicus furinalis* differs from *V. christensoni*, in the thickness of the outermost chorion of eggs and the size of embryonic hooks. *Vampirolepis phyllostomi* (Vaucher, 1982) from *Phyllostomus hastatus* is first recorded from Bolivia. *Mathevotaenia boliviana* sp. n. from *Glossophaga soricina* differs from *M. cubana* Zdzitowiecki et Rutkowska, 1980, in the size, the number of proglottids, and the size of suckers. Unidentified juvenile *Vampirolepis* and *Cycloskrjabinia* are reported from *Artibeus planirostris* and *Phyllostomus hastatus*, respectively.

INTRODUCTION

The helminth fauna of the Bolivian bats has very little been studied. As far as we know, only *Vampirolepis christensoni* (Macy, 1931) Spassky, 1954 [1] has been reported from Chiroptera in Bolivia [2], but its morphological characteristics are known only from the original description [3], which is deficient in some details. Many of the cestodes from Neotropical Chiroptera in the present collection are reported from Bolivia for the first time.

MATERIALS AND METHODS

Total 241 bats composed of 20 species were collected from various parts in Bolivia between July 31 and October 13, 1984, by the second author (Fig. 1), and were examined for cestodes by the first author. The bats were autopsied immediately

FIG. 1. A sketch map showing the collecting sites of the bats in Bolivia. For the locality number, see Table 1.

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Table 1. Bats examined and their cestode parasites from Bolivia in 1984

Serial No. of locality in Fig. 1.	Locality	Date	Bat species	Number of bats			Cestode species
				examined	infected	%	
1	House	31 Jul.	*Myotis nigricans*	4	0	0	
	Buena Vista, Santa Cruz		*Molossus molossus*	9	2	22	*Vampirolepis longisaccata* sp.n.
					1	11	*V. santacruzensis* sp.n.
					1	11	*V. crassihamata* sp.n.
			Desmodus youngii	1	0	0	
			Carollia persicillata	3	0	0	
			C. brevicauda	1	0	0	
2	Water tunnel	13 Aug.	*C. perspicillata*	13	0	0	
	San Miguel, Santa Cruz						
3	House	12 Aug.	*M. nigricans*	5	0	0	
	Okinawa, Santa Cruz						
4	House and forest	4 Sept.	*M. nigricans*	18	0	0	
	Handerman, Santa Cruz	9 Oct.	*Artibens planirostris*	8	1	13	*V.* sp.
			Uroderma bilovatum	1	0	0	
		11–13 Oct.	*M. nigricans*	43	0	0	
5	House	6 Aug.	*C. brevicauda*	1	0	0	
	San Juna, Santa Cruz	6 Aug.	*Glossophaga soricina*	4	0	0	
6	House	18 Sept.	*Sturnira lilium*	5	0	0	
	Nueva Espana, Chive, Pando		*C. brevicauda*	2	0	0	
			C. perspicillata	1	0	0	
			Lonchophylla thomasi	1	0	0	
7	Garden of a hotel	15 Sept.	*S. lilium*	15	0	0	
	Chive, Pando		*C. perspicillata*	5	0	0	
			C. sp.	1	0	0	
			C. brevicauda	2	0	0	
			Artibeus cinereus	1	0	0	

			Phyllostomus hastatus	1	1	100	*V. phyllostomi* (Vaucher, 1982) *Cycloskrjabinia* sp.
			P. elongatus	1	0	0	
			Tonatia bidens	1	0	0	
		16 Sept.	*S. lilium*	10	0	0	
			A. cinereus	1	0	0	
			C. perspicillata	5	0	0	
			C. brevicauda	4	0	0	
			D. rotundus	2	0	0	
			Micronycteris minuta	2	2	100	*V. bihamata* sp.n.
			M. molossus	1	0	0	
		20 Sept.	*Molossops planiristris*	1	0	0	
8	Garden of a hotel Cobija, Pando	11 Sept.	*M. molossus*	14	0	0	
			Eptesicus furinalis	2	0	0	
			G. soricina	1	1	100	*Mathevotaenia boliviana* sp.n.
		30 Sept.	*E. furinalis*	11	1	9	*V. pandoensis* sp.n.
			M. molossus	3	0	0	
9	Forest El Naranjal, Nazaret, Cobija	27 Sept.	*D. rotundus*	2	0	0	
			A. planirostris	13	0	0	
			A. lituratus	1	0	0	
			S. lilium	16	0	0	
			U. bilobatum	1	0	0	

after capture at the collecting sites. The specimens of cestodes as well as a part of the gut were fixed in Carnoy's fluid, and were brought to Japan. After being soaked in 45% acetic acid for about 30 min for expanding, the gut was stored in 70% alcohol. Cestodes obtained from these alcohol-preserved guts were rinsed in water for 12 hr. Then they were stained with Haidenhain's hematoxylin, dehydrated in alcohol, cleared in xylene, and mounted in Canada balsam. Interference contrast light microscope was used when sufficient specimens were available. Measurements are given in millimeters.

RESULTS

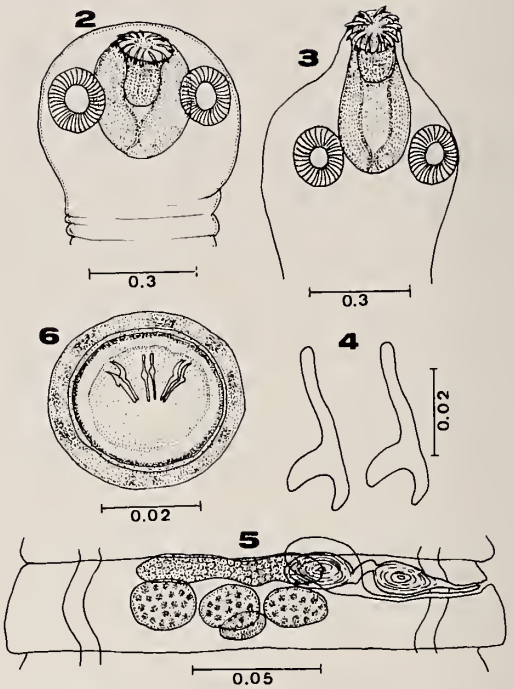
The bats and cestodes obtained are shown in Table 1. The cestodes found were as follows: *Vampirolepis longisaccata* sp. n.; *V. santacurzensis* sp. n.; *V. crassihamata* sp. n.; *V. phyllostomi* (Vaucher, 1982), comb. n.; *V. bihamata* sp. n.; *V. pandonensis* sp. n.; *Mathevotaenia boliviana* sp. n.; juveniles of *Vampirolepis* and *Cycloskrjabinia* species.

Vampirolepis longisaccata sp. n.
(Figs. 2–6)

Of the nine specimens of the bat, *Molossus molossus*, captured in a house at Buena Vista, Santa Cruz, on July 31, 1984, two were found infected with two specimens each of this new species.

Description: Medium-sized hymenolepidid; strobila length 52–98; maximum width 1.8–2.3. Metamerism distinct, craspedote, margins serrate. Proglottids wider than long. Scolex 0.350–0.630 long and 0.455–0.560 wide, slightly set off from neck. Rostellum 0.210 long by 0.105–0.133 wide, armed with a single row of 36–38 spanner-shaped hooks 0.035 long. Hook handle long and curved against guard; guard round at its end, making a right angle with handle; blade remarkably curved and slightly round at its end. Rostellar sac oval when the rostellum is invaginated, 0.322–0.413 long by 0.217–0.231 wide. Suckers round, 0.140–0.168 by 0.105–0.126. Neck absent.

Genital pores unilateral, located a little anterior to middle of proglottid margins. Cirrus sac pyriform, 0.140–0.182 long by 0.035–0.043 wide, extending anterolaterally beyond longitudinal excretory canals. Internal seminal vesicle 0.070–0.112 by 0.035–0.042, enlarging to fill proximal portion of cirrus sac. External seminal vesicle oval, 0.105–0.168 by 0.035–0.070. Testes three in number, subspherical, 0.070–0.098 by 0.067–0.070, situated in posterior field of proglottid and arranged in a transverse row, one poral and two aporal. Testes not in contact with longitudinal excretory canals laterally. Vagina opening in genital atrium ventral to orifice of male duct, extending to median field, posterior to cirrus sac, then enlarging, forming large seminal receptacle. Seminal receptacle 0.112–0.140 by 0.056–0.084, situated anterior to poral testis. Ovary transversely elongated, 0.210–0.315 wide. Vitelline gland weakly lobed, 0.091–0.128 by 0.035–0.063. Uterus arising directly from ovarian lobe as a lobed sac, gradually enlarging, filling all available space



Figs. 2–6. *Vampirolepis longisaccata* sp. n.
2: Scolex with rostellum invaginated. 3: Scolex with rostellum evaginated. 4: Rostellar hooks. 5: Mature proglottid. 6: Egg. Scales in mm.

in senile proglottids. Eggs spherical or ellipsoidal, 0.042–0.046 by 0.039–0.042, surrounded by four envelopes; outermost chorion thick and with smooth surface. Onchospheres spherical, 0.032–0.035 in diameter; embryonic hooks 0.011 long.

Type host: *Molossus molossus* (Pallas, 1766).

Site of infection: Small intestine.

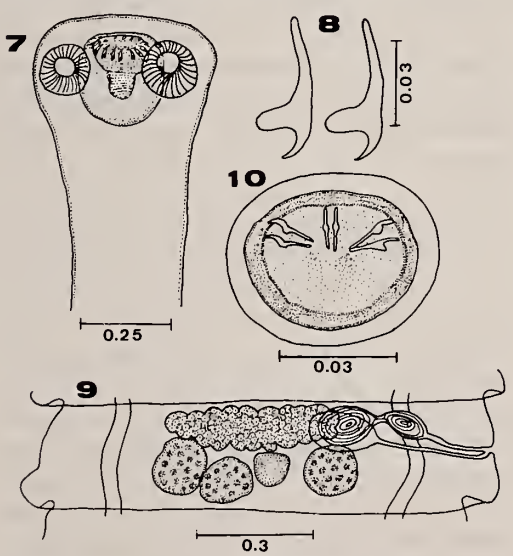
Type locality and date: Buena Vista, Santa Cruz, Bolivia; July 31, 1984.

Type specimen: Holotype: NSU Lab. Coll. No. 8502. Paratypes: No. 8503.

Remarks: The present new species closely resembles *Vampirolepis christensoni* from *Tadarida laticaudata* and Molossidae sp. [1] in the number and length of rostellar hooks. However, it differs from *V. christensoni* in the longer strobila (52–98 vs. 29–46) and the shape of rostellar hooks (guard and blade round at its end, and guard slightly shorter than blade vs. guard and blade sharp at its end, and approximately equal in length).

Vampirolepis santacruzensis sp. n.
(Figs. 7–10)

Of the nine specimens of the bat, *Molossus molossus*, captured in a house at Buena Vista, Santa Cruz, on July 31, 1984, one contained a specimen of the present new species.



Figs. 7–10. *Vampirolepis santacruzensis* sp. n.
7: Scolex. 8: Rostellar hooks. 9: Mature proglottid. 10: Egg. Scales in mm.

Description: Medium-sized hymenolepidid; mature strobila 65 in length and 1.2 in maximum width. Metamerism distinct, craspedote, margins slightly serrate. All proglottids wider than long. Scolex 0.420 long by 0.476 wide, distinctly set off from neck measuring 0.9 long by 0.4 wide. Rostellum 0.231 long by 0.175 wide, armed with a single row of 23 hooks measuring 0.046 long. Hook handle long; guard thick and round at its end; blade remarkably curved and shape at its end. Rostellar sac spherical when the rostellum is invaginated, 0.315 by 0.345, extending posterior to suckers. Suckers round, 0.147–0.161 by 0.126–0.161.

Genital pores unilateral, situated at middle of proglottid margins, not protruding. Testes three in number, oval, 0.105–0.119 by 0.070–0.084, arranged in a transverse row, one poral and two aporal. Cirrus sac pyriform, 0.154–0.175 long by 0.035 wide, extending anterolatelally beyond longitudinal excretoy canals. Internal seminal vesicle 0.070–0.084 by 0.028–0.053, enlarging to fill proximal portion of cirrus sac. External seminal vesicle oval, 0.070–0.084 by 0.028–0.053, extending to poral testis and dorsal to seminal receptacle. Vagina opens in genital atrium, extending to median field, posterior to cirrus sac, then enlarging, forming voluminous seminal receptacle measuring 0.105–0.154 by 0.084. Ovary transversely elongated, frequently irregularly lobate in anterior half of proglottid. Vitellarium compact, directly posterior to ovary, 0.140 by 0.077–0.084. Eggs oval or spherical, 0.046–0.056 by 0.035–0.046; outermost chorion thin, with smooth surface. Onchospheres spherical, 0.028–0.039 by 0.025–0.028, embryonic hooks 0.014 long.

Type host: *Molossus molossus* (Pallas, 1766).

Site of infection: Small intestine.

Type locality and date: Buena Vista, Santa Cruz, Bolivia; July 31, 1984.

Type specimen: Holotype: NSU Lab. Coll. No. 8504.

Remarks: *Vampirolepis santacruzensis* sp. n. most closely resembles the foregoing *V. longisaccata* in the shape and size of scolex, and the size of eggs. The rostellar hooks of *V. santacruzensis*,

however, characteristically differ in the form of hook handle (curved toward the guard vs. curved against the guard). It can also be separated from *V. longisaccata* by that it possesses fewer rostellar hooks (23 vs. 38), longer rostellar hooks (0.046 vs. 0.035), the longer neck (0.9 vs.absent), longer embryonic hooks (0.014 vs. 0.011) and in the shape of ovary (irregularly lobated vs. bilobed).

Vampirolepis crassihamata sp. n.
(Figs. 11–13)

Of the nine specimens of the *Molossus molossus*, from Buena Vista, Santa Cruz, collected on July 31, 1984, one was found infected with a specimen of this new species. It was fully mature, but not gravid.

Description: Small-sized hymenolepidid; strobila length 32; maximum width 0.5. Metamerism distinct, margins serrate. Proglottids wider than long. Scolex 0.560 by 0.476, not distinctly set off from neck. Rostellum 0.189 long by 0.161 wide, armed with a single circle of 22 hooks. Hooks measuring 0.053 long; hook handle long and thick, guard prominent, bluntly round at its end, slightly longer than blade; blade sharp at its end. Rostellar sac spherical, 0.245 in diameter, extending posterior to suckers. Suckers discoidal, 0.133–0.140 by 0.154.

Genital pores unilateral, situated in middle or a little posterior to middle of proglottid margins. Testes three in number, round to oval, 0.084–0.091 by 0.067–0.084, medullary, forming a transverse row in posterior field of proglottid. Internal seminal vesicle measuring 0.070–0.105 by 0.028, gradually enlarging to fill proximal portion of cirrus sac. Cirrus sac 0.140–0.175 by 0.028, positioned anteromedially to genital atrium, extending beyond longitudinal excretory canals. External seminal vesicle 0.091–0.098 by 0.028, directly dorsal to seminal receptacle in anterior half of proglottid. Vagina initially posterior to cirrus sac, passing beneath cirrus sac just prior to crossing longitudinal excretory canals, gradually expanding into voluminous seminal receptacle measuring 0.063–0.077 by 0.035. Ovary medial, transversely elongated, frequently irregularly lobate, in anterior half of proglottid. Vitelline gland compact, lobed, 0.049 by 0.021–0.028, located at posterior to ovary.

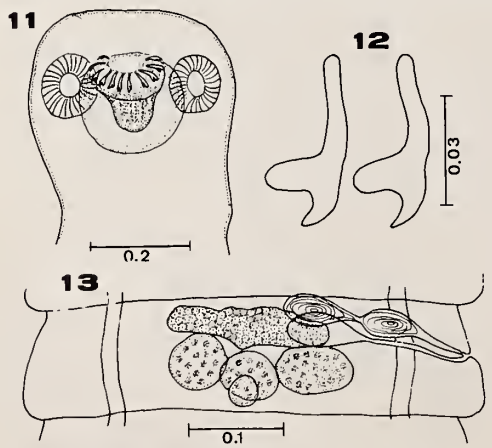
Type host: *Molossus molossus* (Pallas, 1766).

Site of infection: Small intestine.

Type locality and date: Buena Vista, Santa Cruz, Bolivia; July 31, 1984.

Type specimen: Holotype: NSU Lab. Coll. No. 8505.

Remarks: The present new species most closely resembles *Vampirolepis santacruzensis* in the number of rostellar hooks and the shape of scolex. However, it differs from that species in the size and shape of rostellar hooks (0.053 vs. 0.046; handle and guard strong vs. handle and guard attenuate).

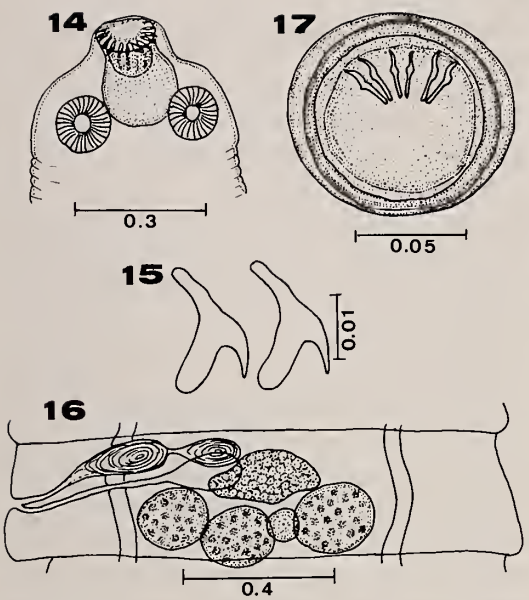


Figs. 11–13. *Vampirolepis crassihamata* sp. n.
11: Scolex. 12: Rostellar hooks. 13: Mature proglottid. Scales in mm.

Vampirolepis phyllostomi (Vaucher, 1982) comb. n.
(Figs. 14–17)

Hymenolepis phyllostomi Vaucher, 1982 [4], pp. 457–459, fig. 5.

One *Phyllostomus hastatus* captured in a garden of a hotel at Chive, Pando, on September 15, 1984, contained five mature specimens and 27 juveniles of this species. *Phyllostomus hastatus* was the most heavily parasitized bat, one specimen having two species of cestodes, *V. phyllostomi* and *Cycloskrjabinia* sp., which amounted to a total of 68 worms. Since the original description of *V. phyl-*



FIGS. 14–17. *Vampirolepis phyllostomi* (Vaucher, 1982)
14: Scolex. 15: Rostellar hooks. 16: Mature proglottid. 17: Egg. Scales in mm.

lostomi (Vaucher, 1982) was based on immature specimens in which gravid and senile proglottids were undeveloped, morphological characteristics of the egg and onchosphere were not included.

Description: Worms 25–75 in length and 0.8–1.2 in maximum width. Edges of proglottids serrate, genital pores unilateral, and located at middle of lateral margins of proglottids. Scolex 0.315–0.420 long by 0.420–0.532 wide, not set off from neck. Rostellum 0.112–0.119 long by 0.119–0.140 wide, armed with a single circle of 50 hooks measuring 0.012 long. Suckers round, unarmed, 0.119–0.140 by 0.105–0.119. Testes three in number, arranged in a transverse row, and measuring 0.091 by 0.084. Cirrus sac club-shaped, attaining to a size of 0.196–0.210 long by 0.042–0.049 wide, occupied by internal seminal vesicle measuring 0.119–0.147 by 0.049. External seminal vesicle 0.084 by 0.042–0.056. Ovary transversely elongated, 0.245 wide, lobed, in anterior half of proglottid. Vagina opening in genital atrium, extending medially, then enlarging, and forming seminal receptacle. Seminal receptacle 0.077–0.112 by 0.053–0.060, extending medial to midline of proglottid. Vitelline gland weakly lobed, 0.042 by 0.049. Eggs 0.116–0.129 by 0.105–0.116, surrounded by four envelopes; outermost chorion thick, with smooth surface. Onchospheres spherical, 0.081–0.084 by 0.077–0.084; embryonic hooks 0.035 long.

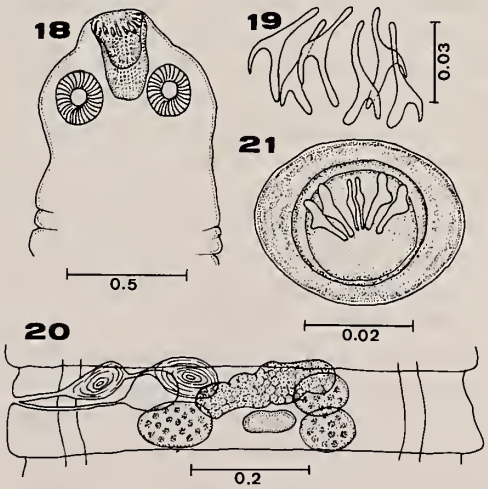
Remarks: Spassky [5] created the genus *Vampirolepis* for the systematic classification of those hymenolepidid species which possess a rostellum armed with more than 20 Y-shaped hook, parasitize Chiroptera and have three testes arranged in a line. Since subdivision into further genera of the species, which are originally placed in *Hymenolepis* Weinland, 1858, is deemed necessary by this time, the generic name *Vampirolepis* should be widely adopted.

The present authors hold the view that *Hymenolepis phyllostomi* Vaucher, 1982, should be placed in the genus *Vampirolepis* Spassky, 1954.

Vampirolepis bihamata sp. n.
(Figs. 18–21)

Of two *Micronycteris minuta* captured in a garden of a hotel at Chive, Pando, on September 16, 1984, one was found infected with two specimens of this cestode.

Description: Medium-sized hymenolepidid; mature strobila 35–52 in length and 0.6–0.8 in



FIGS. 18–21. *Vampirolepis bihamata* sp. n.
18: Scolex. 19: Rostallar hooks. 20: Mature proglottid. 21: Egg. Scales in mm.

maximum width. Metamerism distinct, proglottid margins serrate. Scolex 0.350–0.385 long and 0.441–0.455 wide, not set off from neck. Suckers round, 0.140–0.161 by 0.126–0.133. Rostellum 0.210–0.244 long by 0.154–0.203 wide, armed with a double row of 88–90 hooks measuring 0.063–0.070 long. External hooks, handle and guard approximately equal in length; guard round at its end; blade sharp at its end. Internal hooks, handle attenuate; guard round at its end, longer than blade; blade shape at its end. Rostellar sac 0.371–0.420 by 0.210–0.231.

Genital pores unilateral, located a little anterior to middle of proglottid margins. Testes three in number, oval, 0.084–0.105 by 0.049–0.070, arranged in a form of triangle. Cirrus sac vase-shaped, 0.175–0.224 long and 0.035–0.042 wide, extending anterolaterally beyond longitudinal excretory canals. Internal seminal vesicle 0.084–0.098 by 0.035, enlarging to fill proximal portion of cirrus sac. External seminal vesicle oval, 0.070–0.084 by 0.035–0.042, extending to the posterior part of poral testis. Vagina opens in genital atrium, extending medially, then enlarging and forming seminal receptacle. Seminal receptacle oval, 0.077–0.084 by 0.056. Ovary transversely elongated and frequently irregularly lobate. Vitelline gland 0.035–0.056 by 0.035, directly posterior to ovary. Eggs oval or spherical, 0.056 by 0.042–0.046, surrounded by four envelopes; outermost chorion thin, with smooth surface. Onchospheres spherical, 0.028 in diameter; embryonic hooks strong, 0.018 long.

Type host: *Micronycteris minuta* (Gervais, 1856)

Site of infection: Small intestine.

Type locality and date: Chive, Pando, Bolivia; September 16, 1984.

Type specimen: Holotype: NSU Lab. Coll. No. 8506. Paratypes: No. 8507.

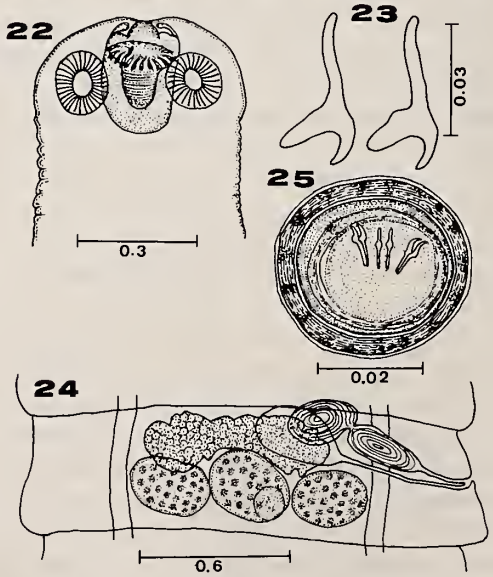
Remarks: So far as is known, the rostellum of *Vampirolepis* species previously known from Chiroptera [6–12] is armed with a single row of hooks, but that of the present form is armed with a double row of characteristic hooks. This character is sufficient for recognizing a new species for which the name *Vampirolepis bihamata* sp. n. is proposed herewith. This is the first cestode to be reported from the bat belonging to the genus *Micronycteris*.

Vampirolepis pandoensis sp. n.
(Figs. 22–25)

Of the 11 specimens of the bat, *Eptesicus furinalis* (d'Orbigny, 1947), collected in a garden of a hotel at Cobija, Pando, on September 30, 1984, one was found infected with a specimen of this new species.

Description: Medium-sized hymenolepidid; mature worm 106 long and 1.8 wide. Metamerism distinct, craspedote, margins serrate. All proglottids wider than long. Scolex 0.346 long by 0.526 wide, not sharply demarcated from strobila. Rostellum nut-shaped, 0.180 long, armed with a single circle of 41 spanner-shaped 0.035 long. Hook handle long and attenuate; guard round at its end, longer than blade; blade sharp at its end. Rostellar sac elongated, 0.318 long and 0.180 wide, extending posterior to suckers. Suckers round, 0.152–0.166 by 0.138–0.152. Neck absent.

Genital pores unilateral, situated in middle of proglottid margins. Testes three in number, 0.084–0.098 by 0.105–0.126, oral to round, forming a transverse row in the posterior field



Figs. 22–25. *Vampirolepis pandoensis* sp. n.
22: Scolex. 23: Rostellar hooks. 24: Mature proglottid. 25: Egg. Scales in mm.

of proglottid. External seminal vesicle oval, 0.098–0.112 by 0.056, directly dorsal to seminal receptacle in anterior half of proglottid. Internal seminal vesicle 0.126 by 0.035, gradually enlarging to fill the proximal portion of cirrus sac. Cirrus sac 0.203–0.210 long and 0.035 wide, extending beyond longitudinal excretory canals. Vagina initially posterior to cirrus sac, passing beneath cirrus sac just prior to crossing longitudinal excretory canals, gradually expanding into voluminous seminal receptacle 0.063–0.084 by 0.154. Ovary 0.330–0.371, medial transversely elongate, frequently irregularly lobate, in the anterior field of proglottid. Vitelline gland lobate, 0.105–0.140 by 0.070–0.098, posterior to ovary. Eggs spherical, 0.039–0.042 by 0.046, surrounded by four envelopes; outermost chorion thick and with smooth surface. Onchospheres spherical, 0.028–0.032 in diameter; embryonic hooks 0.011 long.

Type host: *Eptesicus furinalis* (d'Orbigny, 1947).

Site of infection: Small intestine.

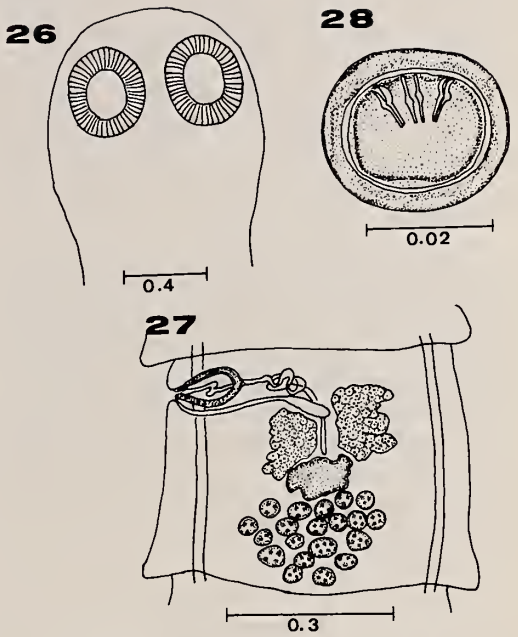
Type locality and date: Cobija, Pando, Bolivia; September 30, 1984.

Type specimen: Holotype: NSU Lab. Coll. No. 8507.

Remarks: From bats of the genus *Eptesicus*, seven species of the genus *Vampirolepis* have hitherto been registered; *V. decipiens* (Diesing, 1850) [12]; *V. christensoni* (Macy, 1931) [1]; *V. balsaci* (Joyeux et Baer, 1934) [13]; *V. skrjabinariana* (Skarbilovič, 1946) [14]; *V. roudabusch* (Macy et Rausch, 1946) [15]; *V. rysavyi* (Tenora et Baruś, 1960) [16] and *V. lasionycteridis* (Rausch, 1975), comb. n. [17, 18]. The present new species most closely resembles *V. christensoni* in the number, length and shape of rostellar hooks. However, it differs from that species in the thickness of the outermost chorion of eggs (0.004 vs. membranous) and the shorter embryonic hooks (0.011 vs. 0.017).

Mathevotaenia boliviana sp. n.
(Figs. 26–28)

One *Glossophaga soricina* captured in a garden of a hotel at Cobija, Pando, on September 11, 1984, contained two specimens of this new species.



Figs. 26–28. *Mathevotaenia boliviana* sp. n.
26: Scolex. 27: Mature proglottid. 28: Egg. Scales in mm.

Description: Small-sized anoplocephalid; length of strobila including scolex 1.6–3.9 and maximum width 0.6–0.7. Scolex 0.761 long by 0.802 wide. Rostellum absent. Four unarmed suckers 0.332–0.346 by 0.290. Single set of reproductive system. Posterior borders of proglottids overlapping the anterior borders of the succeeding ones, giving a denticulate appearance of strobila. Genital pores, alternating irregularly, situated in the anterior part of proglottid.

Testes 16–20 in number, situated in posterior field of a proglottid, and measuring 0.049–0.063 by 0.035–0.042. Cirrus sac 0.119–0.140 long by 0.049–0.063 wide. Cirrus unarmed, cylindrical. Behind cirrus sac, in the antero-medial field of proglottid, there is strongly coiled vas deferens. Vagina running transversely along posterior border of cirrus sac to midline. Vitelline gland, irregular in shape, measuring 0.070–0.081 by 0.105–0.140. Lobed ovary almost symmetric, measuring 0.259 wide. Eggs oval or spherical, 0.032–0.035 by 0.028–0.032. Onchospheres spherical, 0.021–0.028 by 0.025–0.028; embryonic hooks 0.011 long.

Type host: *Glossophaga soricina* (Pallas, 1766).

Site of infection: Small intestine.

Type locality and date: Cobija, Pando, Bolivia; September 11, 1984.

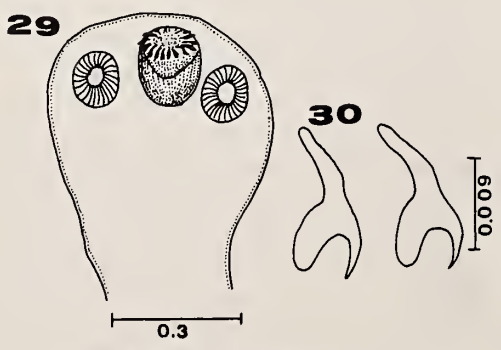
Type specimen: Holotype: NSU Lab. Coll. No. 8508. Paratypes: 8509.

Remarks: *Mathevotaenia boliviana* sp. n. closely resembles *M. cubana* Zdzitowiecki et Rutkowska, 1980, from *Phyllonycteris poeyi* and *Erophylla sezekorni sezekorni* [19], in the number of testes and the shape of ovary. However, it differs from *M. cubana* in the following characters: 1) shorter strobila (1.6–3.9 vs. 6.20); 2) fewer number of proglottids (16–19 vs. more than 30); and 3) larger suckers (0.332–0.346 by 0.290 vs. 0.168–0.180).

Vampirolepis sp.
(Figs. 29–30)

Eight specimens of *Artibens planirostris* (Spix, 1823) were collected in a house and forest at Handerman, Santa Cruz, on October 9, 1984. One of them harbored two minute juvenile cestodes belonging to the *Vampirolepis*.

Worms 8–13 long by 0.5–0.7 wide. Scolex 0.490 by 0.490. Rostellum 0.084 by 0.105, armed with a single row of 24 hooks 0.018 long. Rostellar sac 0.189 by 0.154. Suckers round, 0.140–0.154 by 0.126–0.140. Neck slender, 1.38–1.81 long by 0.263–0.437 wide. Mature and gravid proglottids unknown.



Figs. 29–30. *Vampirolepis* sp.
29: Scolex. 30: Rostellar hooks. Scales in mm.

Cycloskrjabinia sp.

One of the specimen of *Phyllostomus hastatus* (Pallas, 1767) collected in a garden of a hotel at Chive, Pando, on September 15, 1984, was infected with 36 minute juvenile cestodes belonging to the genus *Cycloskrjabinia*.

Anoplocephalidae; worms 7–9 long by 0.7–0.8 wide. Scolex 0.940–0.968 by 0.845. Rostellum absent. Suckers round, 0.221–0.235 by 0.194–0.207. Neck absent. Mature and gravid proglottids unknown.

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